**OBJECTIVES:** To analyze the costs of macrolides use compared to cephalosporines for treatment of Acute Bacterial Sinusitis (ABSs) in the era of increasing resistance to *Streptococcus pneumoniae*. **METHODS:** We used a decision analysis model (TreeAge Pro 2013) to perform a cost-minimization and sensitivity analysis to determine what level of macrolide resistance in a community would trigger cephalosporine use. Costs and clinical outcomes of ABSs were extracted from a systematic review of the literature and official local databases. Clinical response was derived from prospective clinical trials, investigations and from clinical experts experience, were we had ≤1 source. **RESULTS:** We have found that the mean cost of empirical treatment with macrolides for ABSs was 79 EUR when community *S. pneumoniae* resistance was at 0%; 77 EUR at 10%; 82 EUR at 20% and 88 EUR at 30%. Cephalosporines were found to be cost-minimizing when the prevalence of macrolide resistance to *S. pneumoniae* exceeded 15%. Sensitivity analysis variables that had a significant impact on our cost-minimization threshold included proportion of macrolide resistance to *S. pneumoniae*, cost of antibiotics and probabilities of clinical cure with antibiotics. **CONCLUSIONS:** We believe we have performed the first cost-based model and sensitivity analysis to determine what level of macrolide resistance in the community could trigger a switch of empirical therapy for ABSs from macrolides to cephalosporines in Slovakia. Our investigation is to our knowledge also locally the first to employ decision analysis to explore the relationship between antimicrobial resistance and clinical decision making in ABSs. From a payer perspective, cephalosporines appears to be a reasonable alternative to macrolides for empirical treatment of ABSs, especially given the current prevalence of macrolides resistance among *S. pneumoniae* in community that reached 30% level, nationwide.

**PRS40**

**ECONOMIC EVALUATION OF MANDIBULAR ADVANCEMENT DEVICE TO TREAT OBSTRUCTIVE SLEEP APNEA**

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**OBJECTIVES:** In the treatment of obstructive sleep apnea/hyoponea syndrome (OSAHS) moderate patients are primarily offered Continuous Positive Airway Pressure (CPAP). This study aims to assess the cost-effectiveness of mandibular advancement device (MAD), a commonly suggested alternative, as compared to CPAP for moderate OSAHS patients in The Netherlands. **METHODS:** The prognosis of a hypothetical cohort of 50-year-old patients with moderate OSAHS was simulated with a Markov model to estimate the costs and quality-adjusted life-years (QALYs) for both CPAP and MAD. A distinctive factor incorporated in the model was switch of therapy. All input parameters, including the risks of experiencing myocardial infarction, stroke and motor vehicle crashes (MVC) were based on literature and clinical expert opinion. Costs and effects were estimated over a 5-year time horizon using a health care provider perspective and were discounted at a rate of 4% and 1.5%, respectively. Robustness of the results was investigated with several sensitivity and scenario analyses. **RESULTS:** Compared with CPAP, MAD is less expensive (€4,511 vs. €5,302) and only slightly less effective (3.44 vs. 3.49 QALYs) resulting in an incremental cost-effectiveness ratio (ICER) of €15,393 saved per QALY lost. The most influential parameter was the cost of MAD device and its titration. Quality-of-life values, compliance rates, costs and the probabilities of switching treatment, cardiovascular events and MVC were varied in the scenario analyses. Under the majority of the scenarios MAD remained less cost-effective compared to CPAP. **CONCLUSIONS:** Over a 5-year time horizon, MAD therapy may be considered not cost-effective in the treatment of moderate OSAHS patients in The Netherlands. Further research on the impact of both treatments on long-term risks and improvement in the quality of life is required. Similarly, more long-term studies using a uniform compliance definition are needed to inform future cost-effectiveness analyses.

**PRS41**

**INTEGRATING THE LONG-TERM HEALTH BURDEN OF ORAL CORTICOSTEROIDS IN THE COST-EFFECTIVENESS OF OMALIZUMAB**

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**OBJECTIVES:** Omalizumab offers an alternative to maintenance oral corticosteroids (OCS) in the treatment of severe persistent asthma. Despite widespread recognition of the adverse effects from OCS, there is little quantitative evidence on their health burden or costs. Failing to account for the adverse effects of OCS may underestimate the cost-effectiveness of innovative steroid-sparing medicines such as omalizumab. This study aims to explore the possibilities for integrating evidence on the burden of OCS in cost-effectiveness analysis using omalizumab as a case study. **METHODS:** A model was developed to evaluate the long-term cost-effectiveness of omalizumab in patients requiring maintenance OCS. Costs were from a health service perspective and outcomes were measured as quality-adjusted life years (QALYs). The burden from maintenance use of OCS was quantified with population-based approach, with a decision model and with threshold analysis. **RESULTS:** The incremental cost-effectiveness ratio (ICER) was £37,987 per QALY gained, which is above conventional thresholds used in the UK. Threshold analysis showed that the annual health losses from maintenance use of oral corticosteroids would need to be 0.12 QALYs per year. This is double the quantifiable health losses with the population-based approach and with the decision model and 10% of the health gains achieved with omalizumab. **CONCLUSIONS:** The burden from maintenance OCS can be integrated in cost-effectiveness analysis but the extent to which these estimates account for their full impact on health depends on the approach used and underlying assumptions. The challenges arise from sparse randomised evidence, time lag in the adverse effects and unclear relationship between risk and long-term steroid load. These are empirical questions which can be answered with further research. Such research would be valuable not only for decision making in severe asthma but also for other conditions treated with maintenance OCS.

**PRS42**

**ECONOMIC IMPACT OF A SMOKING CESSATION PROGRAM IN MEXICO: ENROLLING EMPLOYEES AND EMPLOYERS**

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**BACKGROUND:** Smoking costs at work affect both employers and employees. These costs are a result of a combined loss of productivity, time off work due to illness, smoking breaks and increasing insurance costs. **OBJECTIVES:** This study aims to evaluate the economical impact of a 12 week smoking cessation program with varenicline from an employer perspective in a medium size Mexican-Corporate setting. **METHODS:** A decision tree was built in order to estimate the two endpoints of the program: resource used in terms of costs and productivity gains in labor hours, in a three year horizon. Smokers enrolling in the program were assumed to be the proportion of people who reported being very much indeed interested on quitting smoking in a 2005 UK survey (27%). A promotional cost of a 12 week combo-pack of varenicline was provided by the manufacturer. A literature review was performed in order to obtain smoking specific data of the country and response rates. Labor costs were retrieved from the Mexican National Institute of Statistics and Geography (INEGI). A base scenario of a medium sized company (250 employees) was assumed to show the potential benefits of the program. **RESULTS:** Assuming a 250 employees company and a shared proportion of 50% of the costs of the program between employees and employers, companies would have to invest US$178 per employee only at the first year, and have potential savings of US$228 for each of them after 3 years. At the same circumstances the net productivity gains per programme participant would be in an amount of 70.8 hours. **CONCLUSIONS:** This research showed that if mexican employers invest in a smoking cessation program, significant productivity gains and savings could be reached in a 3 year horizon.

## RESPIRATORY-RELATED DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

**PRS43**

**THE RELATIONSHIP BETWEEN TREATMENT SATISFACTION AND ADHERENCE IN COPD PATIENTS IN 5 COUNTRIES**

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**OBJECTIVES:** To assess the relationship between treatment satisfaction and adherence in chronic obstructive pulmonary disease (COPD) in European patients, and whether the strength of this relationship varies according to country. **METHODS:** Data were taken from the 5EU (France, Germany, Italy, Spain, and UK) 2011 National Health and Wellness Survey (NHWS), a cross-sectional survey representative of the total adult populations in each 5EU country. The current analysis included all respondents taking one or two treatments for COPD (including chronic bronchitis, COPD, and emphysema; n=914). Satisfaction with medication was measured using a single item per treatment, and averaged for respondents taking two treatments. Adherence was measured using a single 4-item Morisky Medication Adherence Scale (MMAS) for all COPD treatments used. Spearman correlations were used to assess the relationship when adherence was considered as an ordinal variable, and binary logistic regressions were used to assess the relationship between the two constructs when adherence was dichotomized. Regressions included age and gender as covariates. **RESULTS:** Bivariate correlations demonstrated a modest relationship between satisfaction and adherence within COPD patients across the five countries $r_s$ = .133, p<0.001). The strength of this relationship ranged from a low of $r_s$ =0.05 in France (p =0.60) to a high of $r_s$= .37 in Spain (p<0.001). A significant interaction between country and satisfaction confirmed that the relationship varied by country. When the relationship was examined within each country, satisfaction was a significant predictor of adherence only in Spain and the UK (both p<0.05). **CONCLUSIONS:** Mean level of adherence to COPD treatments differed across European countries. Higher satisfaction was generally associated with greater adherence, but the strength of this relationship varied. Ensuring treatments are satisfactory to the patient may promote greater adherence, but the strength of the impact is likely to vary across populations.

**PRS44**

**FACTORS RELATED TO ADHERENCE AFTER A MULTIFACTORIAL INTERVENTION TO IMPROVE IT IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD). ICEPOC STUDY**

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**OBJECTIVES:** To identify factors related to adherence after a multifactorial intervention in patients with COPD. **METHODS:** Design: Randomized Controlled Trial (ISRCTN 15106246) Patients: 146 subjects randomly allocated (random blocks of 4 patients) in two groups (intervention group-IG, control group-CG). Intervention components: 1) Motivational aspects: beliefs-behaviour about COPD (group and individual interviews); 2) Cognitive aspects: information about illness; and 3) Skills: inhaling techniques training. Follow-up: 1 year, 5 visits/group. Primary Outcome: adherence (pill/doses count); Secondary Outcomes: functional status (spirometry), quality of life (Saint George Respiratory Questionnaire-SGRQ); Independent variables: intervention, age, sex, educational level, comorbidity, COPD severity stage (SEPAR guidelines), prescribed medication. Statistical analysis: Four partial logistic regression models, fixed- and random effects estimation, were carried out, a final model was built considering them. Statistical packages SPSS 15.0 and Stata 11.1. **RESULTS:** Predominance of males (91.8%), mean age 69.08 years (CI95%,67.58-70.44); low cultural level (78.1%), 32.2% current smokers (62.84 pack-years [CI95%,55.34-70.34]), Body Mass Index 30.78 kg/m2 (CI95%,28.78-32.78), 81.2% mild-moderate severity stage, predominance of obstructive respiratory pattern; FEV1 (mean)= 67.58% (CI95%,64.58-71.08), 0.87 exacerbations/year [CI95%, 0.68-1.06]. Pharmacological treatment: inhaled-beta2-adrenergic (80.1%); inhaled-anticholinergic (77.4%); inhaled-corticosteroids (70.5%); mucolitycs (11.6%); xanthine (8.2%); oxygen therapy (4.8%); oral-corticosteroids (0.7%). Adherence was 41% (41.2CG/40.8IG).